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EARTH OBSERVATIONS DIVISION

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USER MANUAL
FOR THE
EARTH OBSERVATIONS DIVISION
R&D TO OLPAAS DOT DATA CONVERSION

Job Order 76-662

(TIRF 79-0033)

(E80-10236) USER MANUAL FOR THE EARTH
OBSERVATIONS DIVISION R AND D TO OLPAAS DOT
DATA CONVERSION (Lockheed Engineering and
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16. Abstract This document describes in detail a system to reformat ground truth data and LANDSAT spectral data for use by the OLPARS system at the Rome Air Development Center. A summary of the three processors that make up this system is followed by operating instructions for users. This system is designed to operate on the Purdue/LARS IBM 3031 Computer. It uses several EOD-LARSYS system processors.					
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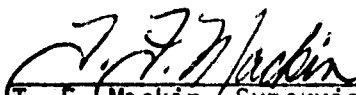
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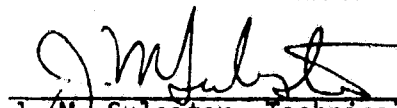
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CONTENTS

Section	Page
1. INTRODUCTION.	1-1
2. SYSTEM DESCRIPTION.	2-1
3. OPERATING INSTRUCTIONS.	3-1
3.1 <u>GTDOTS</u>	3-2
3.2 <u>LANDMRG.</u>	3-3
3.3 <u>OLPARS</u>	3-3
4. SAMPLE RUNS	4-1
5. LISTINGS	5-1
6. REFERENCES.	6-1

1. INTRODUCTION

Because of specific format requirements of the 'On Line Pattern and Recognition System' (OLPARS) an interfacing software module is required for off-loading the Classification and Mensuration Subsystem (CAMS) Development Data Base. This data, which consists of ground truth dot labels and LANDSAT radiance values was required in punched card form for use in scientific investigation by the Rome Air Development Center in Rome, New York. The purpose of this document is to provide for the user a description of this system and instructions on how to use it. Section 2 below gives a detailed account of the system while Sections 3 and 4 provide operating instructions for users and sample runs.

2. SYSTEM DESCRIPTION

The purpose of this system is to provide for the user on punched cards, ground truth dot label information and corresponding LANDSAT spectral values. This information is gathered by three separate processors, all of which are functional on the LARS IBM 370 Virtual Machine Computer via remote terminals.

The first processor, GTDOTS will produce 209 dot labels from a ground truth image. In addition to the dot labels, GTDOTS will also give the total number of different crop categories and the number of dots in each category. This information is stored in an output file on the user's 'A' disk. GTDOTS is a simple EXEC file that calls upon 2 existing EOD-LARSYS routines to generate the dot labels and associated information. The EOD-LARSYS routines GTTCN and GTDDM (Ahlers 1978) are run using regular LARSYS Control Cards. This control card file (stored on the user's 'A' disk) is automatically edited by GTDOTS based on user input. The required input for GTDOTS is a LARS tape and file number for any available ground truth image. Output is a file on the user's 'A' disk containing the dot label information. Due to the requirements of OLPARS, the routine GTDDM has been modified to produce only type 1 dots (instead of the type 1 and type 2 dots)¹.

The second processor, LANDMRG, generates LANDSAT spectral values from up to 5 LACIE segments. This task is accomplished using the EOD-LARSYS program DAMRG (Aucoin 1978). DAMRG is also run from a control card file which is edited by LANDMRG based upon user input. Input is a LARS tape number and up to 5 file numbers (each file number being a LACIE segment), output is a file created on the user's 'A' disk containing the merged LANDSAT channels. The merging technique used in the DAMRG program is the 'channel merge' option. In this sense, merging means not to average spectral values from different acquisitions but simply to concatenate the channels. For example, 2 acquisitions with 4 channels each have the following structure before processing:

¹Type 1 dots are cluster labeled dots, type 2 dots are bias correction dots.

ACQUISITION #1

1	2	3	4
---	---	---	---

Channels 1,2,3,4

ACQUISITION #2

1	2	3	4
---	---	---	---

Channels 1,2,3,4

After processing by DAMRG, the 2 above acquisitions are merged and take on the following structure:

1	2	3	4	5	6	7	8
---	---	---	---	---	---	---	---

Channels 1,2,3,4,5,6,7,8

Channels 1,2,3 and 4 of acquisition #2 now play the role as channels 5,6,7 and 8 after merging. LANDMRG calls upon DAMRG to merge up to 5 acquisitions in this manner. This version of LANDMRG is limited to processing 4 channel LACIE segments. Like GTDOTS, LANDMRG is an interactive EXEC file that prompts for input, the remaining processing is automatic.

The third and final processor, OLPARS, takes the output files created by GTDOTS and LANDMRG, reformats the data, and punches it to cards. The format of the punched card output is shown in Figure 4.4. When activated, OLPARS calls a FORTRAN program to reformat the data and write it to the user's disk. This disk file is then punched and sent to the Remote Spooling Communications Subsystem (RSCS) with a status of 'HOLD'. At this point, processing is complete and the user may return to process additional ground truth and/or LANDSAT segments. Similar to GTDOTS and LANDMRG, OLPARS is an interactive EXEC file run from a remote terminal.

Due to fixed output file naming conventions, GTDOTS or LANDMRG should be run first and second, followed immediately by OLPARS. This order is necessary since each of the three processors (GTDOTS, LANDMRG, OLPARS) will erase previous output files before writing the new ones to the user's 'A' disk.

3. OPERATING INSTRUCTIONS

Before starting a terminal session, the user should link to the JSC750 'A' disk or to another appropriate minidisk (to be assigned) in order to access the necessary modules and text files needed for processing. One such module and its associated test file will override to current EOD-LARSYS version of GTDDM to generate type 1 dots only. The other modules and text files are called directly from OLPARS to reformat the data. To access JSC750, use the GETDISK command:

GETDISK JSC750 191 199 F RR PASS AUCOIN

To avoid accessing the JSC750 disk every terminal session, users may copy the required modules and text files to their own disk directly. The files needed are:

GTDDM	MAP
GTD	MODULE
GTDWR	TEXT
OLPARS	TEXT

In addition to the above files, users must have the two control card files on their own disk. These files ('GTDOTS CC' and 'DAMRG CC') may also be copied from JSC750 using the COPYFILE command.

After the above tasks have been done, the user is ready to begin. First, the LARSYSPI system must be loaded into the user's virtual storage area. This is done using the IPL command upon entering the CMS environment, i.e. key in the terminal 'IPL LARSYSPI'. Users at this point should erase any existing filenames that are reserved for the proper functioning of this system. These are 'FILE FT12F001', 'FILE FT17F001, and 'FILE FT18F001'.

All three processors begin with the following inquiry:

TYPE ONE OF THE FOLLOWING TO CONTINUE:

R - TO BEGIN PROCESSING

I - FOR COMPLETE INSTRUCTIONS

EXIT - TO EXIT AT ANY TIME

Until either R or I or EXIT is entered from the terminal, the inquiry is repeated. If R is entered, processing will commence, if I is entered, brief instructions similar to Section 2 above will be displayed at the terminal, and if EXIT is entered, a return is made to the CMS environment.

3.1 GTDOTS

When processing commences, GTDOTS will ask the following from the user:

ENTER TAPE NUMBER FIRST AND FILE NUMBER FOR THIS IMAGE:

If the user input here is not equal to two numbers, (a tape and file #) the following error message is displayed:

WRONG INPUT OR WRONG FORMAT ... TRY AGAIN

Until either a tape and file number or EXIT is entered, this cycle will repeat. When this step has passed, GTDOTS will edit the control card file 'GTDOTS CC' and begin processing. If this control card file is not on the user's 'A' disk, an error message is displayed and execution is terminated. Also, if the output file 'FILE FT18F001' is not on the temp ('D') disk after EOD-LARSYS has finished, an error message will be written to the terminal. A sample run using GTDOTS is shown as Figure 4.1.

3.2 LANDMRG

When initiated, LANDMRG will prompt the user for a tape and file number(s):

ENTER TAPE NUMBER AND FILE NUMBER(S):

No input or more than 6 numbers (1 tape # plus 5 file #'s) will result in the following error message:

WRONG INPUT, WRONG FORMAT, TOO MANY, OR TOO FEW SITES ENTERED ... TRY AGAIN

After this step, LANDMRG will edit the control card file 'DAMRG CC' and begin processing. If this control card file is not on the user's 'A' disk an error message is displayed and execution is terminated. In addition, if the output file 'FILE FT12F001' is not on the temp ('D') disk after processing, an error message is displayed at the terminal. A sample run using LANDMRG is shown as Figure 4.2.

3.3 OLPARS

This final processor will take the 2 output files 'FILE FT12F001' (from LANDMRG), and 'FILE FT18F001' (from GTDOTS), reformat the data and write it onto a third file 'FILE FT17F001' which is then punched. Unlike the previous 2 processors, OLPARS requires no user input and is entirely automatic. This EXEC file calls upon the program 'OLPARS FORTRAN' to reformat the data and write it on to the user's 'A' disk as 'FILE FT17F001'. Before processing the data, OLPARS checks for the required input files 'FILE FT12F001' and 'FILE FT18F001'. If they are not on the user's 'A' disk an error message is written and execution terminated.

4. SAMPLE RUNS

In the next few pages sample runs displaying the use of GTDOTS, LANDMRG, and OLPARS are shown as Figures 4.1, 4.2, and 4.3. Each sample run illustrates execution of the respective processor from the CMS environment.

CMS

.ip1 larsysr1
CMS / HSEPP REL 2 02/25/80 14:29
CMSZER SYSTEM NAME 'CMSZER' YSTAT NOT AVAILABLE.
R) T=0.07/0.14 12:27:30

.stdots

TYPE ONE OF THE FOLLOWING TO CONTINUE:

R - TO BEGIN PROCESSING
I - FOR COMPLETE INSTRUCTIONS
EXIT - TO EXIT AT ANY TIME

.P
ENTER TAPE NUMBER FIRST AND FILE NUMBER FOR THIS IMAGE:

.7359 J
FILENAME FILETYPE FM FORMAT RECS BLKS
GTDOTS CC A1 F 80 16 2
EDIT:
READTAPE UNIT=11,FILE=1
\$GTTCN
READTAPE UNIT=11, FILE=3
READTAPE UNIT=11,FILE=3

AS OF SEPT. 21 EODLARSYS WILL ACCEPT LANDSAT 1 OR 2 FORMAT
TAPES. TO READ THESE TAPES THE FORM CARD MUST SPECIFY FORM 3
INSTEAD OF 1 OR 2.

PLEASE CHECK SRINews FOR INFORMATION REGARDING CHANGES
INCORPORATED INTO EODLARSYS ON FRIDAY AUGUST 31.
THESE CHANGES EFFECT THE FOLLOWING:

- 1) THE SELECT PROCESSOR
- 2) THE ISOCLS/TESTSF PROCESSOR
- 3) THE LARSYS II OUTPUT TAPE HEADER

ARE THE EOD-LARSYS INPUT CARDS IN THE CARD READER, ON DISK,
OR DO YOU WISH TO CREATE OR MODIFY THEM, OR DO YOU WISH TO GET A
STANDARD SET FROM THE EOD-LARSYS SYSTEM DISK?
(READER, DISK, EDIT, OR GET)

WHAT IS THE FILENAME OF THE EOD-LARSYS INPUT CARDS?

DO YOU WISH TO RUN INTERACTIVELY AT THE TERMINAL, OR HAVE
YOUR EOD-LARSYS JOB SENT TO A BATCH MACHINE?
(INTER OR BATCH)

DEV 192 DOES NOT EXIST

WILL A 10 CYLINDER TEMP DISK SUFFICE FOR YOUR JOB? (YES OR NO)

AT WHICH SITE DO YOU WISH TO RECEIVE THE PRINTER OUTPUT?
(AND OPTIONALLY PRINT STATUS)

Figure 4.1. Sample run of processor GTDOTS using tape #7359, file #3. User
input is in lower case, system response is in upper case.

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WILL YOUR EOD-LARSYS JOB BE USING AN MSS DATA TAPE OR FILE? (YES OR NO)

TYPE IN MSS DATA TAPE NUMBER OR FILE NAME (AND OPTIONALLY ENTER 800
IF THE TAPE IS 800 HPI)

DO YOU DESIRE THE TAPE TO BE COPIED TO TEMPORARY DISK
STORAGE TO ALLOW EARLY RELEASE OF THE TAPE DRIVE? (YES/NO)

DO YOU WISH TO SAVE ANY INTERMEDIATE RESULTS PRODUCED BY
EOD-LARSYS, OR USE ANY PREVIOUSLY SAVED ONES? (YES OR NO)

10002 TAPE 7359 HAS BEEN REQUESTED ON UNIT 181 (TAPMOUNT)
TAPE 181 ATTACHED
10003 TAPE READY... EXECUTION CONTINUING (TAPMOUNT)

YOUR EOD-LARSYS JOB WILL NOW BE RUN

EXECUTION BEGINS...

*GTT FUNCTION HAS BEEN REQUESTED

*GTD FUNCTION HAS BEEN REQUESTED

TAPE 181 ON TAPE 7359

TAPE 181 IN TOWER

DEV 181 DOES NOT EXIST

DEV 181 DOES NOT EXIST

DEV 181 DOES NOT EXIST

DO YOU WANT TO RUN ANOTHER JOB? (YES OR NO)

FILENAME	FILETYPE	IN	FORM	ROWS	BLKS
FILE	FT18F001	D1	F	209	17

* * 'FILE FT18F001' HAS BEEN CREATED ON TAPE 7359 AT 12:32:27 * *
* * IT CONTAINS 209 GROUND TRUTH POINTS, LABELS, AND DATA * *
R: T=33.42/46.82 12:32:27

Figure 4.1 (Continued)

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CMS

ORIGINAL PAGE 1
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.landmrg

TYPE ONE OF THE FOLLOWING TO CONTINUE:

R - TO BEGIN PROCESSING

I - FOR COMPLETE INSTRUCTIONS

EXIT - TO EXIT AT ANY TIME

.P

ENTER TAPE NUMBER AND FILE NUMBER(S):

.3936 1 2 3

FILENAME	FILETYPE	FM	FORMAT	RECS	BLKS
DAMRG	CC	A1	F	80	21

EDIT:

DATAPE INPUT/UNIT=11, FILE= 6

OPTION ANGCOR

DATAPE INPUT/UNIT=11, FILE= 4

OPTION ANGCOR

DATAPE INPUT/UNIT=11, FILE= 3

OPTION ANGCOR

DATAPE INPUT/UNIT=11, FILE= 2

OPTION ANGCOR

DATAPE INPUT/UNIT=11, FILE= 1

OPTION ANGCOR

EDIT:

CHANNEL 1,2,3,4

DATAPE OUTPUT/UNIT=12,FILE=1

CHANNEL 1,2,3,4

DATAPE OUTPUT/UNIT=12,FILE=1

CHANNEL 1,2,3,4

DATAPE OUTPUT/UNIT=12,FILE=1

CHANNEL 1,2,3,4

DATAPE OUTPUT/UNIT=12,FILE=1

CHANNEL 1,2,3,4

DATAPE OUTPUT/UNIT=12,FILE=1

EDIT:

OPTION ANGCOR

DATAPE INPUT/ UNIT=11, FILE= 1

DATAPE INPUT/ UNIT=11, FILE= 1

DATAPE INPUT/ UNIT=11, FILE= 1

DATAPE INPUT/UNIT=11, FILE= 1

OPTION ANGCOR

DATAPE INPUT/ UNIT=11, FILE= 2

DATAPE INPUT/ UNIT=11, FILE= 2

DATAPE INPUT/ UNIT=11, FILE= 2

DATAPE INPUT/UNIT=11, FILE= 2

OPTION ANGCOR

DATAPE INPUT/ UNIT=11, FILE= 3

DATAPE INPUT/ UNIT=11, FILE= 3

DATAPE INPUT/ UNIT=11, FILE= 3

DATAPE INPUT/UNIT=11, FILE= 3

EDIT:

Figure 4.2. Sample run of processor LANDMRG using tape #3936, files 1,2, and 3. User input is in lower case, system response is in upper case.

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DO YOU WISH TO SAVE ANY INTERMEDIATE RESULTS PRODUCED BY
EOD-LARSYS, OR USE ANY PREVIOUSLY SAVED ONES? (YES OR NO)

I0002 TAPE 3936 HAS BEEN REQUESTED ON UNIT 181 (TAPMOUNT)
TAPE 181 ATTACHED

I0003 TAPE READY... EXECUTION CONTINUING (TAPMOUNT)

YOUR EOD-LARSYS JOB WILL NOW BE RUN

EXECUTION BEGINS...

*DAM FUNCTION HAS BEEN REQUESTED

TAPE 181 ON TAPE 404

TAPE 181 DETACHED

DEV 182 DOES NOT EXIST

DEV 183 DOES NOT EXIST

DEV 184 DOES NOT EXIST

DO YOU WANT TO RUN ANOTHER JOB? (YES OR NO)

FILENAME	FILETYPE	FM	FORMAT	RECS	BLKS
FILE	FT12F001	D1	V 3060	12	7
FILENAME	FILETYPE	FM	FORMAT	RECS	BLKS
FILE	FT12F001	A1	V 3060	12	9

A FILE 'FILE FT12F001' CONTAINING THE SPECTRAL VALUES OF THE MERGED
LANDSAT ACQUISITIONS HAS BEEN CREATED ON YOUR 'A' DISK.
R: T=10.37/23.16 09:59:50

Figure 4.2 (Concluded)

CMS

.olpars

TYPE ONE OF THE FOLLOWING TO CONTINUE:
R - TO BEGIN REFORMATTING
I - FOR INQUIRY INSTRUCTIONS
EXIT - TO EXIT AND STOP EXECUTION

.1

Instructions for using OLPARS:

This exec file is the last step in the OLPARS data reformatting system. It is entirely automatic and no user input is required. 'OLPARS EXEC' will execute a Fortran program to read the files 'FILE FT12F001' and 'FILE FT18F001' off the user's 'A' disk, reformat the data and write it to an output file 'FILE FT17F001'. This output file is then punched on cards, with a status of HOLD.

FILENAME	FILETYPE	FM	FORMAT	RECS	BLKS
FILE	FT12F001			12	9
FILENAME	FILETYPE			FILE	BLKS
FILE	FT18F001	A1	F	212	22

EXECUTION BEGINS...

FILENAME	FILETYPE	FM	FORMAT	RECS	BLKS
FILE	FT17F001	A1	F	213	22

PUN FILE 3795 TO PUNCH COPY 01 HOLD

R# T=1.82/2.29 17:19:08

Figure 4.3. Sample run of processor OLPARS. With the exception of the instructions, user input is in lower case, system response is in upper case.

DESCRIPTION OF CARD DECK

The data deck consists of $ncls + 2$ cards which describe the data, followed by the data cards.

Card 1: The number, in integer format, of LANDSAT channels ($ndim$) for this run.

Card 2: The number, in integer format, of ground truth crop categories ($ncls$) in the data set.

Cards 3 thru $ncls + 2$: A four character crop category name (col. 1-4) and the number of vectors within this crop category ($nvec$) in integer format, right justified to column 18.

The data vector deck: Contains the LANDSAT radiance values with at least 1 space between each value.

The example on the next page illustrates a deck consisting of three crop categories ($nod1$, $nod2$, and $nod3$). Followed immediately are the corresponding 125 ten-channel vectors.

Figure 4.4 - OLPARS deck format.

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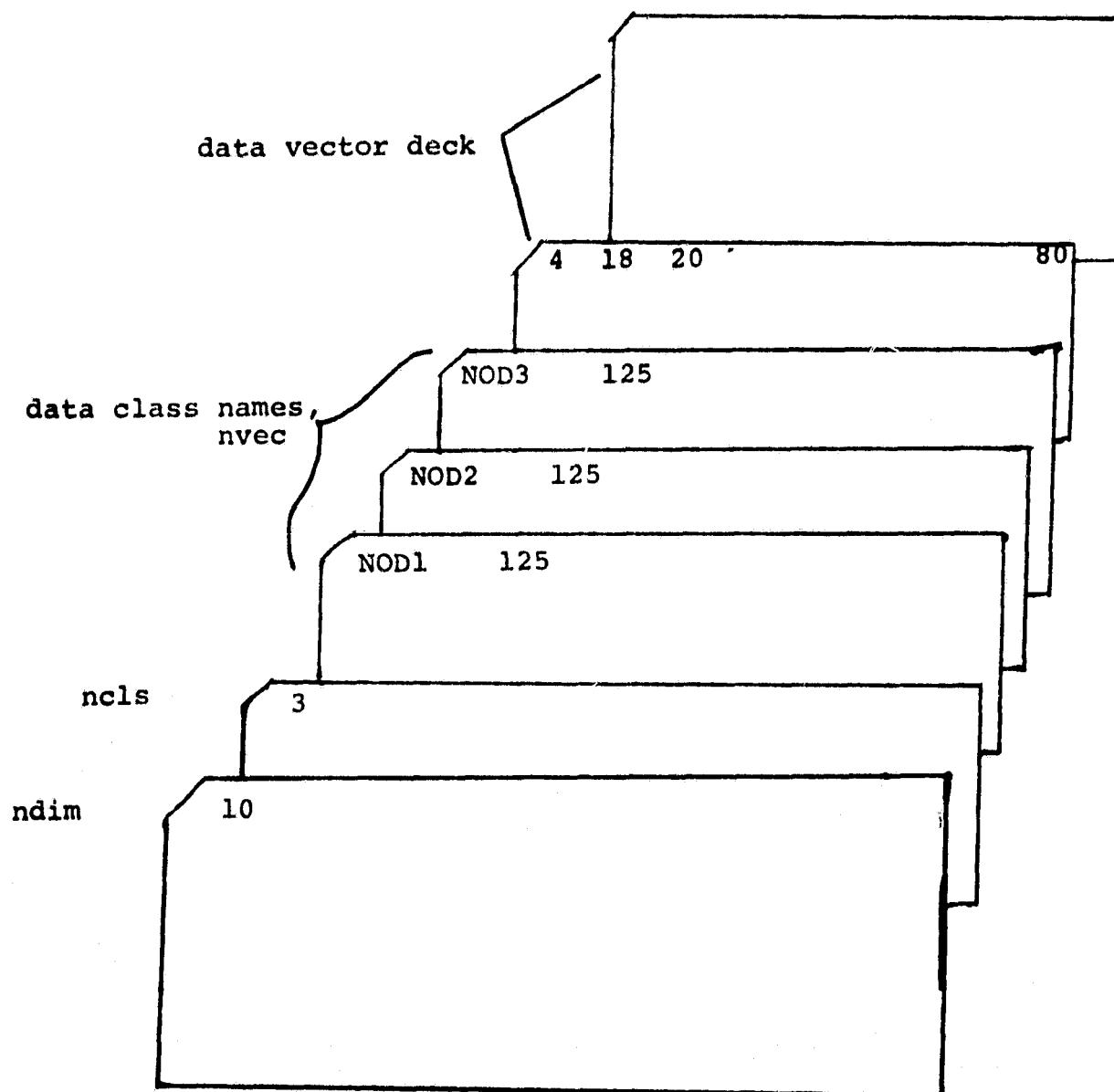


Figure 4.4 - OLPARS Sample deck.

5. LISTINGS

Listings for the FORTRAN Program and EXEC files making up this system are presented in the next several pages. The order of the listings are GTDOTS EXEC, LANDMRG EXEC, OLPARS EXEC, followed by OLPARS FORTRAN.

FILE: GTDOTS EXEC A PURDUE / LARS 3031

CONTROL OFF NOMSG
-L10 &HFGTYPE

TYPE ONE OF THE FOLLOWING TO CONTINUE:

P - TO BEGIN PROCESSING
I - FOR COMPLETE INSTRUCTIONS
EXIT - TO EXIT AT ANY TIME

SEND

TEST FOR CORRECT RESPONSE

&READ ARGS
&IF &INDEX NE 1 &GOTO -L10
&IF & = EXIT &EXIT
&IF & = P &GOTO -L30
&IF & = I &GOTO -L20
&IF & NE P &IF & NE I &GOTO -L10

-L20 &HFGTYPE

INSTRUCTIONS FOR USING GTDOTS-

THIS EXEC PROCEDURE WILL INITIATE 2 FODLARSYS PROCESSORS TO
PRODUCE TWO LABELED DOTS FROM A GROUND TRUTH IMAGE. INPUT FOR
THIS PROCESSOR IS A TAPE # AND FILE #. OUTPUT IS A FILE 'FILE
FTIRFOOT' ON THE USES 'A' DISK THAT CONTAINS THE 209 DOTS, LABELS,
AND CROP TYPES. BEFORE PROCEEDING MAKE SURE THE CONTROL CARD FILE
'GTDOTS CC' IS ON YOUR 'A' DISK. WHEN PROMPTED FOR INPUT
ENTER THE TAPE # FIRST AND THEN THE FILE # AS FOLLOWS:

TAPE# FILE#

WHERE:

TAPE# = LARS TAPE # IN WHICH THE GROUND TRUTH IMAGE RESIDES.
FILE# = FILE # ON THE TAPE FOR A PARTICULAR IMAGE

EXAMPLE: FOR TAPE # 7619 AND FILE # 13, WHEN PROMPTED FOR INPUT
SIMPLY TYPE

7619 13

TO END EXECUTION WHEN PROMPTED FOR INPUT, TYPE 'EXIT'.
FOR MORE INFORMATION SEE THE DOCUMENTATION AND FLOW CHARTS
FOR THIS PROCESSOR.

SEND

-L30 &TYPE ENTER TAPE NUMBER FIRST AND FILE NUMBER FOR THIS IMAGE:
&READ ARGS

TEST FOR CORRECT RESPONSE

&IF & = EXIT &EXIT
&IF &INDEX NE 2 &GOTO -L40
&GOTO -L50

-L40 &TYPE WRONG INPUT OR WRONG FORMAT ...TRY AGAIN
&GOTO -L30

CHECK TO SEE IF 'GTDOTS CC' IS ON THE 'A' DISK, IF NOT TYPE ERROR AND EXIT

-L50 LIST GTDOTS CC A
&IF &RETCODE NE 0 &GOTO -L60

NOW STACK THE EDIT COMMANDS TO EDIT THE 'GTDOTS CC' FILE

&STACK I /UNIT=11
&STACK OFI
&STACK UI
&STACK INPUT READTAPE UNIT=11, FILE=&2
&STACK C/UNIT/ UNIT
&STACK C/ FILE/FIL
&STACK FILE
EDIT GTDOTS CC A

-L60 &GOTO -L70
&TYPE THE CONTROL CARD (CC) FILE 'GTDOTS CC' DOES NOT EXIST
&TYPE ON YOUR 'A' DISK. PLEASE CORRECT THIS PROBLEM AND TRY
&TYPE THIS ROUTINE LATER.
&EXIT

STACK THE FODLARSYS RESPONSES

-L70 &IF &READFLAG = STACK DESRUF
CONWAIT
&STACK DISK

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FILE: GTDOTS EXEC A PURDUE / LARS 3031

ASTACK GTDOTS
ASTACK INTER
ASTACK YES
ASTACK HOUSTON
ASTACK YES
ASTACK &I
ASTACK NO
ASTACK NO
ASTACK NO
EXEC EDDLARPSYS

• NOW COPY THE FILE 'FILE FT18F001' FROM THE 'D' DISK TO THE 'A' DISK

L FILE FT18F001 D
AIF &RETCODE NE 0 &GOTO -L80
LIST FILE FT18F001 A
AIF &RETCODE = 0 ERASE FILE FT18F001 A
COPY FILE FT18F001 D = = A
&HEGTYPE

• • 'FILE FT18F001' HAS BEEN CREATED ON YOUR 'A' DISK. • •
• • IT CONTAINS 209 GROUND TRUTH DOTS, LABELS, AND CROP TYPES. • •
&END

-L80 AEXIT
ATYPE FPDOW - FOR SOME REASON FPD - LARSYS DID NOT COMPLETE ITS JOB
ATYPE 'FILE FT18F001' DOES NOT EXIST ON THE 'D' DISK. CHECK THE
ATYPE PRINTER OUTPUT.

```

&CONTROL OFF NOMSG
-L10 &REGTYPE
TYPE ONE OF THE FOLLOWING TO CONTINUE:
R - TO BEGIN PROCESSING
I - FOR COMPLETE INSTRUCTIONS
EXIT - TO EXIT AT ANY TIME
&END
&READ ARGS
*
* TEST FOR CORRECT RESPONSE
*
&IF &INDEX NE 1 &GOTO -L10
&IF &S = EXIT &EXIT
&IF &S = I &GOTO -L20
&IF &S = R &GOTO -L30
&IF &S NE R &IF &S NE I &GOTO -L10
-L20 &REGTYPE
INSTRUCTIONS FOR USING LANDMRG:
THIS EXEC PROCEDURE WILL MERGE UP TO 5 LANDSAT ACQUISITIONS (FOR
LATER USE WITH GROUND TRUTH DOT LABELS) INTO A SINGLE FILE HAVING
THE NAME 'FILE FT12F001' ON THE USERS OWN 'A' DISK. WITH A TOTAL
OF 4 CHANNELS/ACQUISITION. THIS MEANS UP TO 20 CHANNELS WILL BE
WRITTEN TO THE OUTPUT FILE. THE REQUIRED INPUT FOR THIS ROUTINE IS
A TAPE # AND FILE NUMBER(S). THEY MUST BE ENTERED IN THE FOLLOWING
FORMAT WHEN PROMPTED FOR INPUT:

TAPE# FILE1 FILE2 FILE3 . . . FILEN

WHERE:
TAPE# = IS THE TAPE # CONTAINING THE LANDSAT ACQUISITIONS.
FILE# = IS A FILE # ON THE TAPE CORRESPONDING TO THE ACQUISITION(S)
DESIPED TO BE MERGED. UP TO 5 FILE NUMBERS CAN BE SPECIFIED.
NOTE: THIS ARRANGEMENT REQUIRES ALL FILE #'S TO BE ON THE
SAME TAPE.

EXAMPLE: YOU WISH TO MERGE THE ACQUISITIONS CORRESPONDING TO FILES
2, 6, AND 17 ON TAPE # 7391. WHEN PROMPTED FOR THE INPUT
YOU WOULD TYPE:

7391 2 6 17

IF AT ANY TIME WHEN PROMPTED FOR INPUT YOU WISH TO STOP AND EXIT
THIS PROCESSOR, TYPE 'EXIT' AND YOU WILL RETURN TO THE CMS ENVIRON-
MENT. FOR MORE INFORMATION SEE THE DOCUMENTATION FOR THIS SYSTEM.
&END
-L30 &REGTYPE
ENTER TAPE NUMMRER AND FILE NUMBER(S):
&END
&READ ARGS
&IF &S EQ EXIT &EXIT
&IF &INDEX = 0 &GOTO -L30
&IF &INDEX GT 4 &GOTO -L40
&GOTO -L50
-L40 &REGTYPE
WRONG INPUT,WRONG FORMAT,TOO MANY,OR TOO FEW SITES ENTERED ...TRY AGAIN
&END
&GOTO -L30
*
* CHECK TO SEE IF DAMRG IS ON THE 'A' DISK; IF NOT ISSUE ERROR AND EXIT
*
-L50 LIST DAMRG CC AL
&IF &RETCODE NE 0 &GOTO -L60
&NUM = &INDEX - 1
&GOTO -L70
-L60 &REGTYPE
ERROR-THE REQUIRED FILE 'DAMRG CC' DOES NOT EXIST ON YOUR 'A' DISK.
PLEASE CORRECT THE PROBLEM AND TRY THIS PROCESSOR LATER.
&END
&EXIT
*
* THE NEXT 4 LOOPS,EDIT THE 'DAMRG CC' FILE
*
* THIS LOOP ERASES ALL OCCURENCES OF THE CONTROL CARD 'INPUT/UNIT=11...'
-L70 &LOOP 3 5
&STACK L /INPUT
&STACK DFL

```

FILE: LANDMRG EXEC A PURDUE / LARS 3031

```

      ASTACK UI
      ASTACK FILE
      EDIT DAMRG CC A
      &IF &READFLAG EQ STACK DESBUF
*
* THIS LOOP ERASES ALL OCCURENCES OF THE CONTROL CARD 'CHANNEL 1,2,3,4'
*
      &LOOP 3 5
      ASTACK L /1,2,3,4
      ASTACK DFL
      ASTACK UI
      ASTACK FILE
      EDIT DAMRG CC A
      &IF &READFLAG EQ STACK DESBUF
*
* THIS LOOP INSERTS ANUM 'DATAPE INPUT/UNIT=...' CONTROL CARDS
*
      &GLOBAL1 = 0
      &LOOP 0 ANUM
      &GLOBAL1 = &GLOBAL1 + 1
      &F = 1 + &GLOBAL1
      &IF &GLOBAL1 = 1 ASTACK L/ANGC
      &IF &GLOBAL1 NE 1 ASTACK UI
      ASTACK INPUT DATAPE INPUT/UNIT=11, FILE= &F
      ASTACK C /INP/ INP
      ASTACK C /INP/ INP
      ASTACK C /INP/ INP
      ASTACK C /UNI/ UNI
      ASTACK FILE
      EDIT DAMRG CC A
*
* THIS LOOP INSERTS ANUM 'CHANNEL 1,2,3,4' CONTROL CARDS INTO THE DAMRG
* CONTROL CARD FILE
*
      &GLOBAL1 = 0
      &LOOP 4 ANUM
      &GLOBAL1 = &GLOBAL1 + 1
      &IF &GLOBAL1 = 1 ASTACK L/OUTPUT
      &IF &GLOBAL1 NE 1 ASTACK UI
      ASTACK INPUT CHANNEL 1,2,3,4
      ASTACK C /1,2/ 1,2
      ASTACK C /1,2/ 1,2
      ASTACK FILE
      EDIT DAMRG CC A
*
* EDITING OF THE CONTROL CARD FILE 'DAMRG CC' IS NOW COMPLETE
*
*
* STACK THE FODLARSYS RESPONSES
*
      &IF &READFLAG = STACK DESBUF
      CONWAIT
      ASTACK DISK
      ASTACK DAMRG
      ASTACK INTER
      ASTACK YES
      ASTACK HOUSTON
      ASTACK YES
      ASTACK AI
      ASTACK NO
      ASTACK NO
      ASTACK NO
      EXEC EODLARSYS
*
* NOW COPY THE FILE 'FILE FT12F001' FROM THE 'D' DISK TO THE 'A' DISK
*
      LIST FILE FT12F001 D
      &IF &RETCODE NE 0 &GOTO -L80
      LIST FILE FT12F001 A
      &IF &RETCODE = 0 ERASE FILE FT12F001 A
      COPY FILE FT12F001 D = A
      &HGETYPE
*
* A FILE 'FILE FT12F001' CONTAINING THE SPECTRAL VALUES OF THE MERGED
* LANDSAT ACQUISITIONS HAS BEEN CREATED ON YOUR 'A' DISK
*
      &END
      &EXIT
-L80 &TYPE FOR SOME REASON, EOD - LARSYS DID NOT COMPLETE ITS JOB. THE
      &TYPE FILE 'FILE FT12F001' DOES NOT EXIST ON THE 'D' DISK. CHECK

```


FILE: LANDMPG EXEC A PURDUE / LARS 3031

ATYPE THE PRINTED OUTPUT FOR POSSIBLE ERRORS.

FILE: OLPARS EXEC A PURDUE / LARS 3031

ACONTROL OFF NOMSG
-L10 ABEGTYPE

TYPE ONE OF THE FOLLOWING TO CONTINUE:
R - TO BEGIN PROCESSING
I - FOR COMPLETE INSTRUCTIONS
EXIT - TO EXIT AND STOP EXECUTION

ACEND

• TEST FOR CORRECT RESPONSE

AREAD ARGS

IF AR EQ EXIT &EXIT

IF ARINDEX NE 1 AGOTO -L10

IF AR = R AGOTO -L30

IF AR = I AGOTO -L20

IF AR NE R &IF AR NE I AGOTO -L10

-L20 ABEGTYPE

INSTRUCTIONS FOR USING OLPARS:

THIS EXEC FILE IS THE LAST STEP IN THE OLPARS DATA REFORMATTING
SYSTEM. IT IS ENTIRELY AUTOMATIC AND NO USER INPUT IS REQUIRED.
OLPARS EXEC WILL EXECUTE A FORTRAN PROGRAM TO READ THE FILES
FILE FT12F001 AND FILE FT18F001 OFF THE USER'S 'A' DISK.
REFORMAT THE DATA AND WRITE IT TO AN OUTPUT FILE FILE FT17F001.
THIS OUTPUT FILE IS THEN PUNCHED ON CARDS, WITH A STATUS OF HOLD.

ACEND

• GET THE JSC770 DISK AND DEFINE THE FILEDEFS HERE

-L30 GLOBAL TXTLIR CMSLIR FORTRAN

GETDISK JSC770 191 200 B/A RR PASS AUCOIN NOPRINT

FILEDEF 12 DISK FILE FT12F001 (RECFM U BLOCK 30600 PERM

FILEDEF FT18F001 DISK FILE FT18F001 A1 (LRECL 80 BLOCK 80 PERM

FILEDEF FT17F001 DISK FILE FT17F001 A1 (LRECL 80 BLOCK 80 PERM

FI 15 TERM (PERM

FI 6 PRINTER (PERM

• CHECK FOR 'FILE FT12F001' AND 'FILE FT18F001' ON THE USER'S 'A' DISK

LIST FILE FT12F001 A

IF &RETCODE NE 0 AGOTO -L40

AGOTO -L50

-L40 ABEGTYPE

THE FILE(S) 'FILE FT12F001' (LANDSAT SPECTRAL VALUES) AND/OR
'FILE FT18F001' (GROUND TRUTH DOT LABELS) DO NOT EXIST ON YOUR
'A' DISK. PLEASE CORRECT THIS PROBLEM AND TRY THIS PROGRAM LATER.

ACEND

&EXIT

-L50 LIST FILE FT18F001 A

IF &RETCODE NE 0 AGOTO -L40

• CHECK FOR A FILE 'FILE FT17F001', IF ONE EXISTS, ERASE IT

LIST FILE FT17F001 A

IF &RETCODE NE 0 ERASE FILE FT17F001 A

• NOW BEGIN TO PROCESS THE DATA USING THE PROGRAM 'OLPARS FORTRAN'

LOAD OLPARS (CLEAR START

• CHECK TO SEE IF THE OUTPUT FILE 'FILE FT17F001' WAS CREATED PROPERLY
• THIS FILE CONTAINS THE REFORMATTED GROUND TRUTH CROP TYPES AND
• LANDSAT SPECTRAL VALUES

LIST FILE FT17F001 A

IF &RETCODE NE 0 AGOTO -L60

• NOW PUNCH THE REFORMATTED DATA

REMOTE D TO HOUSTON

SPOOL D HOLD

PUNCH FILE FT17F001 A

&EXIT

-L60 ABEGTYPE

ERROR - THE FILE 'FILE FT17F001' WAS NOT FOUND ON YOUR 'A' DISK
AFTER EXECUTION.

ACEND

```

0001      OLPARS-----OLP00010
0002      PURPOSE-----OLP00020
0003      THE PURPOSE OF THIS PROGRAM IS TO READ 2 INPUT FILES, 'FILE OLP00030
0004      FT12F001' AND 'FILE FT12F001' OFF THE USER'S 'A' DISK, REFORMAT OLP00040
0005      THE DATA FROM THESE FILES, AND WRITE THIS REFORMATTED DATA TO OLP00050
0006      A DISK FILE 'FILE FT17F001' ON THE USER'S 'A' DISK. OLP00060
0007      USAGE-----OLP00070
0008      THIS PROGRAM IS CALLED FROM THE EXEC FILE 'OLPARS EXEC'. OLP00080
0009      MAJOR PROGRAM VARIABLES, ARRAYS OLP00090
0010      VARIABLE,ARRAY COMMON BLK DESCRIPTION OLP00100
0011      ----- OLP00110
0012      DOTNUM(209) OLP00120
0013      ID(5) TAPERD OLP00130
0014      IDATA(380) OLP00140
0015      MSSDAT(20,209) OLP00150
0016      NCHAN OLP00160
0017      NCLS OLP00170
0018      NTYPE(26) OLP00180
0019      SUBROUTINES AND SUBPROGRAMS REQUIRED OLP00190
0020      DIRECT CALLS ARE MADE TO END-LARSYS ROUTINES TAPHDR, FLDINT OLP00200
0021      AND LINFRD OLP00210
0022      METHOD USED OLP00220
0023      FIRST ALL LINES (AND ALL CHANNELS) WITH THE LANDSAT SPECTRAL OLP00230
0024      VALUES FROM 'FILE FT12F001' ARE COPIED INTO THE ARRAY OLP00240
0025      MSSDAT(I,J). THEN FROM 'FILE FT12F001', THE NUMBER OF CHOP OLP00250
0026      TYPES, AND DOT NUMBERS ARE REFORMATTED ALONG WITH THE LANDSAT OLP00260
0027      SPECTRAL VALUES AND WRITTEN TO UNIT 17 ('FILE FT17F001') ON OLP00270
0028      THE USER'S 'A' DISK. OLP00280
0029      OLP00290
0030      OLP00300
0031      OLP00310
0032      OLP00320
0033      OLP00330
0034      OLP00340
0035      OLP00350
0036      OLP00360
0037      OLP00370
0038      OLP00380
0039      OLP00390
0040      OLP00400
0041      OLP00410
0042      OLP00420
0043      OLP00430
0044      OLP00440
0045      OLP00450
0046      OLP00460
0047      OLP00470
0048      OLP00480
0049      OLP00490
0050      OLP00500
0051      OLP00510
0052      OLP00520
0053      OLP00530
0054      OLP00540
0055      OLP00550
0056      OLP00560
0057      OLP00570
0058      OLP00580
0059      OLP00590
0060      OLP00600
0061      OLP00610
0062      OLP00620
0063      OLP00630
0064      OLP00640
0065      OLP00650
0066      OLP00660
0067      OLP00670
0068      OLP00680
0069      OLP00690
0070      OLP00700
0071      OLP00710
0072      OLP00720
0073      OLP00730
0074      OLP00740
0075      OLP00750
0076      OLP00760
0077      OLP00770
0078      OLP00780
0079      OLP00790
0080      OLP00800
0081      OLP00810
0082      OLP00820
0083      OLP00830
0084      OLP00840
0085      OLP00850
0086      OLP00860
0087      OLP00870
0088      OLP00880
0089      OLP00890
0090      OLP00900
0091      OLP00910
0092      OLP00920
0093      OLP00930
0094      OLP00940
0095      OLP00950
0096      OLP00960
0097      OLP00970
0098      OLP00980
0099      OLP00990
0100      OLP01000
0101      OLP01010
0102      OLP01020
0103      OLP01030
0104      OLP01040
0105      OLP01050
0106      OLP01060
0107      OLP01070
0108      OLP01080
0109      OLP01090
0110      OLP01100
0111      OLP01110
0112      OLP01120
0113      OLP01130
0114      OLP01140
0115      OLP01150
0116      OLP01160
0117      OLP01170
0118      OLP01180
0119      OLP01190
0120      OLP01200
0121      OLP01210
0122      OLP01220
0123      OLP01230
0124      OLP01240
0125      OLP01250
0126      OLP01260
0127      OLP01270
0128      OLP01280
0129      OLP01290
0130      OLP01300
0131      OLP01310
0132      OLP01320
0133      OLP01330
0134      OLP01340
0135      OLP01350
0136      OLP01360
0137      OLP01370
0138      OLP01380
0139      OLP01390
0140      OLP01400
0141      OLP01410
0142      OLP01420
0143      OLP01430
0144      OLP01440
0145      OLP01450
0146      OLP01460
0147      OLP01470
0148      OLP01480
0149      OLP01490
0150      OLP01500
0151      OLP01510
0152      OLP01520
0153      OLP01530
0154      OLP01540
0155      OLP01550
0156      OLP01560
0157      OLP01570
0158      OLP01580
0159      OLP01590
0160      OLP01600
0161      OLP01610
0162      OLP01620
0163      OLP01630
0164      OLP01640
0165      OLP01650
0166      OLP01660
0167      OLP01670
0168      OLP01680
0169      OLP01690
0170      OLP01700
0171      OLP01710
0172      OLP01720
0173      OLP01730
0174      OLP01740
0175      OLP01750
0176      OLP01760
0177      OLP01770
0178      OLP01780
0179      OLP01790
0180      OLP01800
0181      OLP01810
0182      OLP01820
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0184      OLP01840
0185      OLP01850
0186      OLP01860
0187      OLP01870
0188      OLP01880
0189      OLP01890
0190      OLP01900
0191      OLP01910
0192      OLP01920
0193      OLP01930
0194      OLP01940
0195      OLP01950
0196      OLP01960
0197      OLP01970
0198      OLP01980
0199      OLP01990
0200      OLP02000
0201      OLP02010
0202      OLP02020
0203      OLP02030
0204      OLP02040
0205      OLP02050
0206      OLP02060
0207      OLP02070
0208      OLP02080
0209      OLP02090
0210      OLP02100
0211      OLP02110
0212      OLP02120
0213      OLP02130
0214      OLP02140
0215      OLP02150
0216      OLP02160
0217      OLP02170
0218      OLP02180
0219      OLP02190
0220      OLP02200
0221      OLP02210
0222      OLP02220
0223      OLP02230
0224      OLP02240
0225      OLP02250
0226      OLP02260
0227      OLP02270
0228      OLP02280
0229      OLP02290
0230      OLP02300
0231      OLP02310
0232      OLP02320
0233      OLP02330
0234      OLP02340
0235      OLP02350
0236      OLP02360
0237      OLP02370
0238      OLP02380
0239      OLP02390
0240      OLP02400
0241      OLP02410
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0245      OLP02450
0246      OLP02460
0247      OLP02470
0248      OLP02480
0249      OLP02490
0250      OLP02500
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0256      OLP02560
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0258      OLP02580
0259      OLP02590
0260      OLP02600
0261      OLP02610
0262      OLP02620
0263      OLP02630
0264      OLP02640
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0266      OLP02660
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0268      OLP02680
0269      OLP02690
0270      OLP02700
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0279      OLP02790
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0288      OLP02880
0289      OLP02890
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0294      OLP02940
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0296      OLP02960
0297      OLP02970
0298      OLP02980
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0300      OLP03000
0301      OLP03010
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0307      OLP03070
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0309      OLP03090
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0317      OLP03170
0318      OLP03180
0319      OLP03190
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0356      OLP03560
0357      OLP03570
0358      OLP03580
0359      OLP03590
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0398      OLP03980
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0437      OLP04370
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0444      OLP04440
0445      OLP04450
0446      OLP04460
0447      OLP04470
0448      OLP04480
0449      OLP04490
0450      OLP04500
0451      OLP04510
0452      OLP04520
0453      OLP04530
0454      OLP04540
0455      OLP04550
0456      OLP04560
0457      OLP04570
0458      OLP04580
0459      OLP04590
0460      OLP04600
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0462      OLP04620
0463      OLP04630
0464      OLP04640
0465      OLP04650
0466      OLP04660
0467      OLP04670
0468      OLP04680
0469      OLP04690
0470      OLP04700
0471      OLP04710
0472      OLP04720
0473      OLP04730
0474      OLP04740
0475      OLP04750
0476      OLP04760
0477      OLP04770
0478      OLP04780
0479      OLP04790
0480      OLP04800
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0487      OLP04870
0488      OLP04880
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0490      OLP04900
0491      OLP04910
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0495      OLP04950
0496      OLP04960
0497      OLP04970
0498      OLP04980
0499      OLP04990
0500      OLP05000
0501      OLP05010
0502      OLP05020
0503      OLP05030
0504      OLP05040
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0509      OLP05090
0510      OLP05100
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0513      OLP05130
0514      OLP05140
0515      OLP05150
0516      OLP05160
0517      OLP05170
0518      OLP05180
0519      OLP05190
0520      OLP05200
0521      OLP05210
0522      OLP05220
0523      OLP05230
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0525      OLP05250
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0527      OLP05270
0528      OLP05280
0529      OLP05290
0530      OLP05300
0531      OLP05310
0532      OLP05320
0533      OLP05330
0534      OLP05340
0535      OLP05350
0536      OLP05360
0537      OLP05370
0538      OLP05380
0539      OLP05390
0540      OLP05400
0541      OLP05410
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0543      OLP05430
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0545      OLP05450
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0547      OLP05470
0548      OLP05480
0549      OLP05490
0550      OLP05500
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0553      OLP05530
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0555      OLP05550
0556      OLP05560
0557      OLP05570
0558      OLP05580
0559      OLP05590
0560      OLP05600
0561      OLP05610
0562      OLP05620
0563      OLP05630
0564      OLP05640
0565      OLP05650
0566      OLP05660
0567      OLP05670
0568      OLP05680
0569      OLP05690
0570      OLP05700
0571      OLP05710
0572      OLP05720
0573      OLP05730
0574      OLP05740
0575      OLP05750
0576      OLP05760
0577      OLP05770
0578      OLP05780
0579      OLP05790
0580      OLP05800
0581      OLP05810
0582      OLP05820
0583      OLP05830
0584      OLP05840
0585      OLP05850
0586      OLP05860
0587      OLP05870
0588      OLP05880
0589      OLP05890
0590      OLP05900
0591      OLP05910
0592      OLP05920
0593      OLP05930
0594      OLP05940
0595      OLP05950
0596      OLP05960
0597      OLP05970
0598      OLP05980
0599      OLP05990
0600      OLP06000
0601      OLP06010
0602      OLP06020
0603      OLP06030
0604      OLP06040
0605      OLP06050
0606      OLP06060
0607      OLP06070
0608      OLP06080
0609      OLP06090
0610      OLP06100
0611      OLP06110
0612      OLP06120
0613      OLP06130
0614      OLP06140
0615      OLP06150
0616      OLP06160
0617      OLP06170
0618      OLP06180
0619      OLP06190
0620      OLP06200
0621      OLP06210
0622      OLP06220
0623      OLP06230
0624      OLP06240
0625      OLP06250
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0627      OLP06270
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0906
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0017      C
0018      30
0019      DO 40 I=1,NIM
0020      FOP 4AT(177.10X,ERROR = FND OF FILE REACHED ON UNIT 12)
0021      IF (1.LF.1) MSSDAT(1,(LINE-1)*14+1)=DATA(1)
0022      IF (2.LF.1) AND. LE.31 MSSDAT(2,(LINE-1)*14+19)=DATA(1)
0023      IF (3.LF.1) AND. LE.57 MSSDAT(3,(LINE-1)*14+38)=DATA(1)
0024      IF (4.LF.1) AND. LE.76 MSSDAT(4,(LINE-1)*14+57)=DATA(1)
0025      IF (5.LF.1) AND. LE.95 MSSDAT(5,(LINE-1)*14+76)=DATA(1)
0026      IF (6.LF.1) AND. LE.114 MSSDAT(6,(LINE-1)*14+95)=DATA(1)
0027      IF (7.LF.1) AND. LE.133 MSSDAT(7,(LINE-1)*14+114)=DATA(1)
0028      IF (8.LF.1) AND. LE.152 MSSDAT(8,(LINE-1)*14+133)=DATA(1)
0029      IF (9.LF.1) AND. LE.171 MSSDAT(9,(LINE-1)*14+152)=DATA(1)
0030      IF (10.LF.1) AND. LE.190 MSSDAT(10,(LINE-1)*14+171)=DATA(1)
0031      IF (11.LF.1) AND. LE.209 MSSDAT(11,(LINE-1)*14+190)=DATA(1)
0032      IF (12.LF.1) AND. LE.228 MSSDAT(12,(LINE-1)*14+209)=DATA(1)
0033      IF (13.LF.1) AND. LE.247 MSSDAT(13,(LINE-1)*14+228)=DATA(1)
0034      IF (14.LF.1) AND. LE.266 MSSDAT(14,(LINE-1)*14+247)=DATA(1)
0035      IF (15.LF.1) AND. LE.285 MSSDAT(15,(LINE-1)*14+266)=DATA(1)
0036      IF (16.LF.1) AND. LE.304 MSSDAT(16,(LINE-1)*14+285)=DATA(1)
0037      IF (17.LF.1) AND. LE.323 MSSDAT(17,(LINE-1)*14+304)=DATA(1)
0038      IF (18.LF.1) AND. LE.342 MSSDAT(18,(LINE-1)*14+323)=DATA(1)
0039      IF (19.LF.1) AND. LE.361 MSSDAT(19,(LINE-1)*14+342)=DATA(1)
0040      IF (20.LF.1) AND. LE.380 MSSDAT(20,(LINE-1)*14+361)=DATA(1)
0041      CONTINUE
0042      FOP 4AT(11.8(5X,13))
0043      WRITE(15,50)((MSSDAT(I,J),I=1,NCHAN),J=1,209)
0044      READ THE GROUND TRUTH DOT FILE 'FILE FT18F001.A1'
0045      NCLS = NUMBER OF CROP TYPES FOR THIS GROUND TRUTH IMAGE
0046      READ(18,60) NCLS
0047      FORMAT(17X,12)
0048      THIS LOOP READS THE CROP TYPES (NTYPE(I)) AND THE NUMBER
0049      OF EACH TYPE (NUMBER(I)).
0050      DO 70 I=1,NCLS
0051      READ(18,40) NTYPE(I),NUMBER(I)
0052      FORMAT(1X,A1,1X,14)
0053      NOW CONVERT THE 1 LETTER CROP TYPE ID'S INTO 4 LETTER ID'S
0054      DO 40 I=1,NCLS
0055      IF (NTYPE(I).EQ.S) NTYPE(I)=WHEA
0056      IF (NTYPE(I).EQ.T) NTYPE(I)=WHEB
0057      IF (NTYPE(I).EQ.G) NTYPE(I)=WHET
0058      IF (NTYPE(I).EQ.H) NTYPE(I)=HARL
0059      IF (NTYPE(I).EQ.C) NTYPE(I)=HAYS
0060      IF (NTYPE(I).EQ.D) NTYPE(I)=CORN
0061      IF (NTYPE(I).EQ.E) NTYPE(I)=SORG
0062      IF (NTYPE(I).EQ.F) NTYPE(I)=SUGR
0063      IF (NTYPE(I).EQ.P) NTYPE(I)=POTA
0064      IF (NTYPE(I).EQ.L) NTYPE(I)=SUNF
0065      IF (NTYPE(I).EQ.Y) NTYPE(I)=SOYB
0066      IF (NTYPE(I).EQ.V) NTYPE(I)=VEGE
0067      IF (NTYPE(I).EQ.T) NTYPE(I)=TIMB
0068      IF (NTYPE(I).EQ.K) NTYPE(I)=FOIL
0069      IF (NTYPE(I).EQ.Z) NTYPE(I)=ATE
0070      IF (NTYPE(I).EQ.M) NTYPE(I)=ANM
0071      IF (NTYPE(I).EQ.X) NTYPE(I)=ORST
0072      IF (NTYPE(I).EQ.O) NTYPE(I)=OTHE
0073      IF (NTYPE(I).EQ.N) NTYPE(I)=NOID
0074      READ 15 THE DOT NUMBERS
0075      READ(18,100) (DOTNUM(I),I=1,209)
0076      FORMAT(4X,13)
0077      NOW WRITE ON TO THE OUTPUT UNIT THE NUMBER OF CHANNELS(NCHAN),THE
0078      #OF CROP TYPES(NCLS),THE CROP TYPES (NTYPE(I)), AND THE # OF
0079      DOTS FOR THIS CROP TYPE (NUMBER(I)).

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OLP00720
OLP00730
OLP00740
OLP00750
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OLP00770
OLP00780
OLP00790
OLP00800
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OLP01320
OLP01330
OLP01340
OLP01350
OLP01360
OLP01370
OLP01380
OLP01390
OLP01400
OLP01410
OLP01420

FORTRAN IV G LEVEL 21
FILE OLPARS

OLPARS

DATE = 80105

11/17/29

PAI

PURDUE / LARS 3031

0068
0069
0070
0071
0072

C
110 WRITE(17,110) NCHAN
FORMAT(1X,I3)
WRITE(17,110) NCLS
120 WRITE(17,120) (NTYPE(I),NUMBER(I),I=1,NCLS)
FORMAT(A4,10X,I4)

C
C OUTPUT THE SPECTRAL VALES OF THE PIXELS
C

0073
0074
0075
0076
0077

DO 130 K=1,209
130 WRITE(17,140) (MSSDAT(J,DOTNUM(K)),J=1,NCHAN)
140 FORMAT(20(1X,I3))
150 STOP
END

OLP01430
OLP01440
OLP01450
OLP01460
OLP01470
OLP01480
OLP01490
OLP01500
OLP01510
OLP01520
OLP01530
OLP01540
OLP01550
OLP01560

FORTRAN IV G LEVEL 21
FILE OLPARS

OLPARS

DATE = 80105

11/17/29

PAGE 0004

PURDUE / LARS 3031

COMMON BLOCK / TAPERD / MAP SIZE 4CB		COMMON BLOCK / TAPERD / MAP SIZE 4CB		COMMON BLOCK / TAPERD / MAP SIZE 4CB		COMMON BLOCK / TAPERD / MAP SIZE 4CB	
SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
UNIT	0	IFIRST	4	FSCAN	8	SAMEND	C
READY	14	NSCAN	18	LINC	1C	ID	20
LRUF	344	JREC	38C	IRYTE	434	NHUF	4AC
LINEEND	4R4	LININC	488	NSAMP	48C	NOCHAN	4C0
SURPPROGRAMS CALLED							
SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
TAPHDR	164	FLDINT	168	LINEED	16C	IBCOM#	170
SCALAR MAP							
SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
W	100	S	194	G	198	B	19C
C	1A4	J	1A8	E	1AC	P	1R0
Y	10A	V	18C	T	1C0	K	1C4
M	1CC	X	100	N	104	O	108
WHFS	1F0	WHET	1F4	RAPL	1E8	HAYS	1EC
SORG	1F4	SUGR	1F8	POTA	1FC	SUNF	200
VEGE	208	TIMP	20C	SOIL	210	WATE	214
OHST	21C	NOIN	220	OTHE	224	DATAP	228
NUM	230	LINE	234	ENDTAP	238	I	23C
ARRAY MAP							
SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
RLOCK	244	FETVEC	25C	IDATA	204	MSSDAT	8C4
NUMBER	4A7C	DOTNUM	4AE4				
FORMAT STATEMENT MAP							
SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
30	4F28	50	4E57	60	4E63	80	4E69
110	4E79	120	4E7F	14C	4E87		

OPTIONS IN EFFECT ID=EHCDIC.SOURCE.NOLIST.DECK.NOLOAD.MAP
 OPTIONS IN EFFECT NAME = OLPARS , LINECNT = 75
 STATISTICS SOURCE STATEMENTS = 77, PROGRAM SIZE = 23506
 STATISTICS NO DIAGNOSTICS GENERATED

6. REFERENCES

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